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B2

a bell on said second side being adapted to slidably receive in an axial direction the second pipe section end within said sleeve,
whereby said coupling interconnects said adjacent ends of said first and second pipe sections.

sub B2 21. (AMENDED) A method of interconnecting adjacent ends of first and second pipe sections, the end of the first pipe section having an annular corrugation, the method comprising the steps of:

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providing a substantially flat sheet;

forming a rigid corrugation across the width of said substantially flat sheet;

wrapping said sheet into a cylindrical sleeve including a first side having an annular corrugation oriented perpendicular to a longitudinal axis of said sleeve and a second side having a bell; and

securing said sleeve about a first pipe section end by cooperatively engaging said corrugation of said sleeve with the annular corrugation of the first pipe section end.

REMARKS

This Amendment is submitted in response to the Office Action mailed on August 16, 2001. Claims 1, 8 and 21 have been amended, and claims 1-24 remain in the present application. In view of the foregoing amendments, as well as

the following remarks, Applicants respectfully submit that this application is in complete condition for allowance and request reconsideration of the application in this regard.

Claims 1-7 stand rejected under 35 U.S.C. § 112, second paragraph. Applicants have amended claim 1 to recite that the coupling "is adapted to" interconnect the adjacent ends of the first and second pipe sections to make clear that the first and second pipe sections are not being positively recited in the claim. Accordingly, Applicants respectfully request that the rejections of claims 1-7 under § 112 be withdrawn.

Claims 1, 6-8, 10 and 18-20 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Shade, U.S. Pat. No. 5,842,727. Claims 1, 3-8, 10-12 and 15-19 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Claes et al., U.S. Pat. No. 5,415,436. Lastly, claims 1-4, 7-10, 19 and 21-24 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Boynton et al., U.S. Pat. No. 3,501,179. While Applicants traverse each of the rejections noted above, Applicants have amended the claims to more sharply define the present invention over the prior art of record and request that the rejections be withdrawn.

By way of background, Applicants' invention is directed to a pipe coupling for interconnecting adjacent ends of first and second pipe sections, at least one end of the first pipe section having an annular corrugation. The pipe coupling comprises a generally cylindrical sleeve having first and second sides. At least one rigid annular corrugation is provided on the first side of the sleeve that is

oriented perpendicular to a longitudinal axis of the sleeve. The annular corrugation on the first side of the sleeve is adapted to cooperatively engage the annular corrugation on the first pipe section end to secure the sleeve on the first pipe section.

A bell is provided on the second side of the sleeve that is adapted to slidably receive in an axial direction the second pipe section end within the sleeve. In this way, the coupling is adapted to interconnect the adjacent ends of the first and second pipe sections. In one embodiment, the connection of the pipe coupling and the first pipe section end occurs at a factory. The first section of pipe with the attached coupling is then transported to the field, where the second pipe section is coupled to the bell by simply sliding the second pipe section into the bell.

By contrast, Shade is directed to a coupling for interconnecting adjacent ends of spiral corrugated pipe sections. The pipe coupling includes a generally cylindrically shaped body having generally tubular ends extending axially outwardly from a circumferential stop. One of the tubular ends (14) defines a substantially continuous spiral or thread (20) which is adapted to threadably connect to one of the adjacent ends (28a) of the spiral corrugated pipe sections. The other tubular end (16) of the coupling defines a sleeve which is adapted to slidably receive the other of the adjacent ends (28b) of the spiral corrugated pipe sections within the sleeve to thereby interconnect the adjacent ends of the pipe sections.

While Applicants traverse the Examiner's position that the substantially continuous spiral or thread (20) on the one end of the Shade coupling comprises an "annular" corrugation as claimed by Applicants, Applicants have amended each of independent claims 1 and 8 to recite that the annular corrugation on the first side of the sleeve is "oriented perpendicular to a longitudinal axis of the sleeve" to clearly distinguish over the spiral or thread (20) of Shade. Moreover, Applicants submit that there is no teaching or suggestion to modify the spiral or thread (20) of Shade to comprise an annular corrugation as claimed by Applicants since this would clearly destroy the intended purpose and function of the Shade coupling to "threadably connect" to the pipe section end (28a) (see Col. 3, lines 28-33).

Applicants have further amended each of independent claims 1 and 8 to recite that the annular corrugation on the first side of the sleeve cooperatively engages the annular corrugation on the first pipe section end to "secure" the sleeve on the first pipe section. Applicants respectfully submit that the circumferential stop (18) of Shade does not engage the spiral corrugation on the pipe section end (28a) to secure the coupling on the pipe section end (28a) as now claimed by Applicants. Accordingly, Applicants respectfully submit that independent claims 1 and 8, and claims depending therefrom, are allowable and the rejections should be withdrawn.

Claes et al. is directed to a double bell coupler having opposite facing couper bells "C" for receiving adjacent ends of corrugated tubing "B". The double

bell coupler defines an inward valley or stop (10) annularly around its geometric center to limit the extent of engagement of the tubing ends to assure that each is received to the same depth. Each of the coupler bells "C" includes multiple latching elements (60) integrally formed with the coupler bells "C". The latching elements (60) are hingedly connected to the coupler bells "C" to allow the latching elements (60) to rotate or pivot resiliently outward as the latching elements slide over the peak portions of the corrugated tubing during insertion of the tubing into the coupler bells. When the latch elements (60) clear the peak portions, they snap into locking engagement behind the peak portions to secure the corrugated tubing in the coupler bells "C" (see Col 5., lines 4-62. Each coupler bell "C" also includes a radially outwardly directed annular groove (44) for receiving a gasket (30).

For amendment

While Applicants traverse the Examiner's position that the multiple latching elements (60) of Claes et al. comprise an "annular" corrugation as claimed by Applicants, Applicants have amended each of independent claims 1 and 8 to recite that the annular corrugation on the first side of the sleeve is "rigid" to clearly distinguish over the flexible latching elements of Claes et al. Support for this amendment is found on Page 9, lines 18-20 of Applicants' disclosure.

Amended

Contrary to Examiner's position, Applicants submit that the annular groove (44) of Claes et al. does not engage the peak portions of the corrugated tubing sections to secure the double bell coupler on one of the corrugated tubing section ends as now claimed by Applicants. Rather, the annular groove (44) engages the gasket (30) which cannot be considered an annular corrugation on one

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of the corrugated tubing section ends as claimed by Applicants. Moreover, Applicants respectfully submit that the circumferential stop (10) of Claes et al. does not engage a peak portion on one of the corrugated tubing section ends to secure the coupling on the one corrugated tubing section as now claimed by Applicants. Accordingly, Applicants respectfully submit that independent claims 1 and 8, and claims depending therefrom, are allowable and the rejections should be withdrawn.

Lastly, Boynton et al. is directed to a pipe coupling for joining adjacent re-corrugated ends of helical-formed pipe sections. In one embodiment of the pipe coupling shown in Fig. 4, a flat band (16) is tensioned about the adjacent ends of the pipe sections (10) and (12) to form a continuous surface to surface seal about the entire circumference of the abutting pipe section ends. The surface to surface seal is provided by contact of the inner surface of band (16) and an outer surface of at least one of the annular corrugations formed on the re-corrugated pipe section ends. In an alternative embodiment of the coupling as shown in Figs. 5 and 6, the band (16a) includes a pair of axially spaced annular corrugations (18) formed in the band that engage annular corrugations formed on respective pipe section ends to prevent the pipe sections from pulling out of the coupling after the ends of the band have been tensioned together. A continuous surface to surface seal is provided about the entire circumference of each abutting end of the pipe sections (10) and (12) when the ends of the band (16a) are tensioned together.

Applicants respectfully submit that Boynton et al. fails to disclose, teach or suggest a bell formed on one side of the coupling to slidably receive the

second pipe section end within the coupling as claimed by Applicants and the rejections should be withdrawn. While the annular corrugation (18) on one side of the coupling engages the annular corrugation on the one pipe section end as shown in Fig. 6 of Boynton et al., the second annular corrugation (18) on the second side of the coupling prevents the other pipe section end from being slidably received within the coupling as claimed by Applicants. For this reason, the coupling of Boynton et al. comprises a band that is tensioned simultaneously about both ends of the adjacent pipe sections.

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Moreover, Applicants submit that there is no teach or suggestion in the prior art of record to modify the coupling of Boynton et al. to include a bell on one end of the coupling as this would clearly destroy the intended purpose and function of the Boynton et al. coupling to provide a continuous surface to surface contact seal about the adjacent ends of the pipe sections. Accordingly, Applicants respectfully submit that independent claims 1, 8 and 21, and claims depending therefrom, are allowable and the rejections should be withdrawn.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made".

Conclusion

In view of the foregoing response including the amendments and remarks, this application is submitted to be in complete condition for allowance and early notice to this affect is earnestly solicited. If there is any issue that remains which may be resolved by telephone conference, the Examiner is invited to contact the undersigned in order to resolve the same and expedite the allowance of this application.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE**In the Claims:**

Claims 1, 8 and 21 have been amended as follows:

1. (AMENDED) A pipe coupling for interconnecting adjacent ends of first and second pipe sections, the end of the first pipe section having an annular corrugation, said coupling comprising:

a generally cylindrical sleeve having first and second sides;

at least one rigid annular corrugation on said first side of said sleeve being oriented perpendicular to a longitudinal axis of said sleeve and adapted to cooperatively engage the annular corrugation on the first pipe section end to secure said sleeve on the first pipe section; and

a bell on said second side of said sleeve being adapted to slidably receive in an axial direction the second pipe section end within said sleeve;

whereby said coupling [interconnects] is adapted to interconnect said adjacent ends of said first and second pipe sections.

8. (AMENDED) In combination, a pipe coupling and first and second pipe sections, the end of the first pipe section having an annular corrugation, and said coupling comprising:

a generally cylindrical sleeve having first and second sides;

at least one rigid annular corrugation on said first side of said sleeve being oriented perpendicular to a longitudinal axis of said sleeve and adapted to

cooperatively engage the annular corrugation on the first pipe section end to secure said sleeve on the first pipe section; and

a bell on said second side being adapted to slidably receive in an axial direction the second pipe section end within said sleeve,

whereby said coupling interconnects said adjacent ends of said first and second pipe sections.

21. (AMENDED) A method of interconnecting adjacent ends of first and second pipe sections, the end of the first pipe section having an annular corrugation, the method comprising the steps of:

providing a substantially flat sheet;

forming a rigid corrugation across the width of said substantially flat sheet;

wrapping said sheet into a cylindrical sleeve including a first side having an annular corrugation oriented perpendicular to a longitudinal axis of said sleeve and a second side having a bell; and

securing said sleeve about a first pipe section end [to] by cooperatively [engage] engaging said corrugation of said sleeve with the annular corrugation of the first pipe section end.